

CLAIMS

- 1 1. A bumper bar forming a part of a bumper assembly attached to a
2 vehicle, said bumper bar comprising:
3 a roll-formed, tubular beam which is formed along a sweep axis ,
4 wherein said sweep axis has reverse curvatures creating at least two
5 symmetrical inflection points.
- 1 2. The bumper bar of claim 1 wherein the reverse curvature at said
2 inflection points creates a center section of the beam which extends beyond the
3 outline of a beam having a constant sweep.
- 1 3. The bumper bar of claim 1, wherein said beam is comprised of a
2 high-strength steel.
- 1 4. A method for fabricating a bumper bar for a bumper assembly,
2 said method comprising the steps of:
3 providing a sheet of steel;
4 roll-forming said sheet to produce a beam which is formed along an
5 straight central axis; and
6 reforming said tubular/non-tubular beam by sweeping said tubular/non-
7 tubular beam along said axis, so as to define a sweep axis, said sweep axis
8 having reverse curvatures creating at least two inflection points, so that said
9 sweep axis is a complex sweep axis.

1 5. The method of claim 4, including the further step of heat
2 treating includes a further step of heat treating said tubular/non-tubular beam so
3 as to increase the hardness thereof.

1 6. The method of claim 5, wherein said step of heat treating
2 includes a further step of quenching, and wherein said step of quenching is
3 implemented after said step of reforming tubular/non-tubular beam.

1 7. The method of claim 4, wherein roll-forming said sheet of steel
2 to produce a beam comprises roll-forming said sheet of steel to produce a beam
3 having an open seam.

1 8. The method of claim 7, including the further step of closing said
2 seam.

1 9. The method of claim 8, wherein said step of closing said seam
2 comprises welding said seam.